



Patent Claims:

1. (amended) An optical connector for establishing  
a connection to a complementary mating connector  
that has a complementary optical terminal element,  
in particular for establishing multimedia-  
connections in a vehicle, comprising:

a connector housing, for mating connection with said  
complementary connector, and including a mating  
receptacle, and

at least one optical terminal element, including at  
least one fiber receiving sleeve that has a front side and  
a rear side that are connected by walls forming a channel  
which defines an optical axis and includes clamping  
elements,

said optical terminal element being adapted for  
mating connection with said complementary optical  
terminal element of said complementary connector, and  
includes

~~said optical terminal element,~~

~~and that has a front side and a rear side~~

at least one optical fiber section having a front  
end with a front optical contact surface and a rear end  
with a rear optical contact surface, said optical fiber  
section, being affixed in a said channel of said fiber  
receiving sleeve by means of said clamping elements, and  
being positioned, to establish, with said front optical  
contact surface, an optical connection to said

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MOST-standard,

Deleted: (2) with a mating  
receptacle (10)

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rear faces,

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and rear faces,

Deleted: at least one optical  
fiber section (72, 74) with  
a front and a rear optical  
contact surface (82, 84),

Deleted: (12, 14)

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connection with a mating  
optical terminal element

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Deleted: (72, 74) is

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complementary optical element of said complementary  
connector,

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5 said front side of said fiber receiving sleeve,  
being arranged adjacent to, and in the area of said  
front optical contact surface of said optical fiber  
section, and

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fiber section (72, 74)  
is...affixed in the fiber  
receiving sleeve (32, 33) by  
means of clamping elements  
(52a - 52d) and (... [4])

Deleted: wherein the... (32,  
33)...has a front side  
(39)...the... (82)...the... (72, (... [5])

10 wherein said clamping elements define a  
narrowing opening in said channel of said fiber receiving  
sleeve, longitudinally spaced from said front side of  
said fiber receiving sleeve, and arranged with a set-back  
relative to said front optical contact surface such that  
said front end of said optical fiber section extends  
beyond said narrowing opening in said channel of said  
15 fiber receiving sleeve adjacent to said complementary  
optical terminal element of said complementary mating  
connector.

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are...the... (39)...the... (32, (... [6])

2. (amended) The connector, according to claim 1,  
wherein said front side of said fiber receiving sleeve,  
20 for said complementary optical terminal element of said  
complementary mating connector, forms a stop, leaving a  
gap to said front optical contact surface of said optical  
fiber section.

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A... (1) (... [7])

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that, the... (39)...the... (32, 33),  
in the area of the  
front...optical contact  
surface (82) of the optical  
fiber section- (72, 74),  
ing... (38)...for the mating  
terminal of the mating  
connector. (... [8])

25 3. (amended) The connector, according to claim 1,  
wherein said channel of said fiber receiving sleeve  
is a substantially cylindrical fiber channel having  
said clamping elements protruding radially  
inwardly into said  
channel at said narrowing opening.

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preceding...s...characterized in  
that, the... (32, 33) defining...  
(34, 37), the optical fiber  
section (72, 74) being  
affixed  
therein and the... (52a-  
52d)...from the interior  
circumference (60) of the  
fiber receiving sleeve (32,  
33)...the fiber... (34, 37). (... [9])

4. (amended) The connector according to claim 1,

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~~wherein said channel in said fiber receiving sleeve has walls and~~

~~said clamping elements are integrally formed~~

5 with said walls of said fiber receiving sleeve.

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5. (amended) The connector according to claim 1,

wherein said clamping elements are formed to engage said

optical fiber section in displacing and compressing some

material of said optical fiber section.

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10 6. (amended) The connector according to claim 1,

wherein said clamping elements each comprise a front face

adjacent to said front side of said fiber receiving

sleeve, each said front face of said clamping elements

being longitudinally spaced from said front side of said

15 fiber receiving sleeve towards said rear side thereof.

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7. (amended) The connector according to claim 6,

wherein each said front face of said clamping elements is

offset relative to said front side of said fiber

receiving sleeve by more than 30  $\mu$ m and less than 5 mm.

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20 8. (amended) The connector according to claim 1,

wherein said channel of said fiber receiving sleeve

includes a front guide section having a first interior

diameter and a rear insertion section having a second

interior diameter, said second interior diameter being

25 larger than than said first interior diameter.

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9. (amended) The connector according to claim 8,

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wherein a chamfer is provided between said front guide section and said rear insertion section.

Deleted: characterized in that, ... (46) ... the ... (42) ... th ... [18]

10. (amended) The connector according to claim 1, wherein said fiber receiving sleeve includes a rear insertion section and a front guide section having an interior diameter for guiding said fiber section front end that has an exterior diameter, said interior diameter of the front guide section being between 40  $\mu$ m smaller and 120  $\mu$ m larger than said exterior diameter of said optical fiber section.

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Deleted: and a rear insertion section,

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Deleted: (44) wherein the guide section (42) defining a guide for the fiber section (72, 74), wherein its... (86) ... the... the... (72, ... [20]

11. (amended) The connector according to claim 3, wherein said optical fiber section has a radial clearance of 40  $\mu$ m to 100  $\mu$ m in said rear insertion section of said fiber receiving sleeve.

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12. (amended) The connector according to claim 8, wherein said clamping elements are located in said insertion section.

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13. (amended) The connector according to claim 8, wherein said clamping elements are longitudinally spaced from said rear end of said front guide section in direction of said insertion section.

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14. (amended) The connector (1) according to claim 1, wherein at least three clamping elements are arranged in said channel evenly spaced around the circumference of said channel.

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15. (amended), The connector, according to claim 14, wherein said clamping elements are formed as engaging lugs.

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16. (amended), The connector, according to claim 15, wherein said engaging lugs have a substantially triangular cross section, seen in radial direction onto said optical fiber section.

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17. (amended), The connector, according to claim 15, wherein said engaging lugs each has a ramp surface inclined to said rear end of said fiber section (72, 74) and a front face that extends substantially perpendicularly to said optical axis of said optical terminal element.

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Deleted: notches...(52a-52d)...having...rearward tilted...(56a-56d) in order to press in the...from the rear of the connector housing (2) and the latching notches having...arresting area (68a-68d),...the...(54) of the fiber section (72, 74), in order to interlock the fiber section. ... [29]

18. (amended), The connector, according to claim 17, wherein said engaging lugs each has a width in the range of 150  $\mu$ m to 400  $\mu$ m measured in circumference direction of said channel in said fiber receiving sleeve and a height of 50  $\mu$ m to 200  $\mu$ m measured in radial direction of said channel, each lug protruding radially inwardly of the channel.

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19. (amended), The connector, according to claim 1, further comprising at least one electro-optical converter, including an optical input / output, said converter being located at said rear end of said optical fiber section, and said rear optical contact surface of said fiber section, providing an optical connection between said fiber section and said converter.

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20. (amended) The connector according to claim 19  
wherein said electro-optical converter is mounted by  
a bracket directly to said rear side of said  
connector housing with

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... [33]

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that, the...(102, 104)  
being...the...the...(2)...a bracket  
(108)

... [34]

5 21. (amended) The connector according to claim 20,  
wherein said bracket is stamped from sheet metal,  
substantially U-shaped and interlocked on side surfaces  
of said connector housing, the bracket also being  
provided with soldering pins for connecting with a printed  
10 circuit board.

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preceding...s...characterized in  
that, the...(108)  
being...the...(18, 20)...the...(2)...  
and...(110)

... [35]

22. (amended) The connector according to claim 20,  
wherein said bracket comprises at least one elastic spring  
section, pressing said converter onto said rear optical  
contact surface of said fiber section, when assembled.

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preceding...s...characterized in  
that, the...(108) having...(112,  
114)...the...(102, 104) forward  
towards the...(84)...the...(112, 114) is...the...the...has

... [36]

15 23. (amended) The connector according to claim 22,  
wherein said bracket comprises a rear wall and an upper  
cover, integrally connected along a rear upper edge in  
one piece, said spring elastic section being attached to  
said upper cover and said spring elastic section having  
20 a substantially L-shaped cross section.

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preceding...s...characterized in  
that, the...(108)  
having...the...wherein the...(112,  
114) is...the...the...has

... [37]

24. (amended) A method for manufacturing an optical  
connector including  
plastic fibers, in particular for manufacturing a  
multimedia-connector for a vehicle, comprising the steps  
25 of:

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MOST-standard according to  
one of the preceding c...

... [38]

a) providing a connector housing with a mating  
receptacle for mating connection with a complementary  
connector, wherein said connector has at least two

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... [39]

optical terminal elements, for mating connection with mating optical terminal elements of said complementary connector and wherein each of said terminal elements has a fiber receiving sleeve, each with a front side and a rear side connected by a channel including a plurality of inner clamping elements, that define a narrowing opening in said channel, said narrowing opening being longitudinally spaced from said front side of said fiber receiving sleeve,

b) providing at least two optical fiber sections, each, having a front end with a front optical contacting surface and a rear end with a rear optical contacting surface,

c), pressing, said fiber sections, directly into, an associated one of said fiber receiving sleeves, thus fixing said fiber sections, by means of, said clamping elements, in, said fiber receiving sleeves, such that said front end of said optical fiber section extends beyond said narrowing opening in said channel of said fiber receiving sleeve adjacent to said complementary optical terminal element of said complementary connector,

d), positioning at least two electro-optical converters in said connector housing with each a converter at, said rear side, of, each associated fiber receiving sleeve, whereby an optical connection between, said fiber sections, and, said converters, is established through, rear optical contacting surfaces, of, said fiber sections, and

e) affixing, said converters, to, said connector housing.

(amended) The method according to claim 24,

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Deleted: (32, 33), wherein the

Deleted: (72, 74) are fixed

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Deleted: (52 - 52d)

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Deleted: wherein an optical connection can be established with an optical fiber, of the mating ... [40]

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Deleted: (48)

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Deleted: (72, 74)

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Deleted: (102, 104)

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Deleted: (84)

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Deleted: (72, 74)

Deleted: the

Deleted: (102, 104)

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wherein said fiber receiving sleeves, each comprise a front stop surface, in the area of, a front optical contact surfaces, of, said optical fiber sections, also comprising the step of

5 f) pressing each a mounting die, against an associated one, of, said front stop surfaces, forming a front stop for the associated fiber section, during step c).

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